

Methods and systems are provided to control transmit power in a wireless transmitter. By receiving a number of transmit control protocol (TCP) segments, converting the TCP segments to radio link control (RLC) frames and transmitting the RLC frames based on a predetermined targeted frame error rate, the initial RLC frames are transmitted using a minimum of power. Any unsuccessfully transmitted RLC frames are cyclically re-transmitted, along with a number of new RLC frames, at decreasing targeted frame error rates, until all RLC frames in a given transmission cycle are successfully transmitted. Accordingly, a new block of RLC frames are transmitted at the predetermined maximum targeted frame error rate. By transmitting RLC frames in this fashion, the overall transmit power can be reduced as compared to conventional transmission techniques, while increasing total data throughput.